REMARKS

Claims 1-29 and 36-56 were pending when the Office Action was mailed. Applicants herein confirm their oral election of Group I without traverse and cancel non-elected claims 30-35 and 57-62. Applicants herein amend claims 1, 10-12, 36, 45-47, and 49-56. Accordingly, claims 1-29 and 36-56 are currently pending.'

Applicants would like to thank the Examiner for the consideration extended during the telephone interview conducted on April 7, 2008. During the interview, Examiner Kawsar, Examiner Bullock, and the undersigned discussed the proposed amendments with reference to the drawing provided with this response. As requested by Examiner Bullock, applicants have amended claims 36 and 49 to further clarify the subject matter for which they seek protection. Additionally, applicants have amended claim 36 to include "a processor," as requested by the Examiner. Should the Examiner need additional information regarding the interview, he is asked to contact the undersigned.

The following table reflects the rejections presented in the Office Action:

Claims	Basis	References
49-56	101	
1-29 and 36-56	112	
1, 4-8, 13, 36, 39-43, 49-53, and 55	102(e)	Ray
2-3, 9, 22-26, 38, 44, 54, and 56	103(a)	Ray and Niu
10-12	103(a)	Ray, Niu, and Johnson
14-16, and 18	103(a)	Ray and Rahman
17 and 19-21	103(a)	Ray, Rahman, and Niu
27-29 and 37	103(a)	Ray and Drews
45-47	103(a)	Ray, Niu, and Johnson

Applicants respectfully traverse these rejections. Nevertheless, applicants herein amend the claims to clarify the subject matter for which they seek protection.

The Examiner rejects claims 49-56 under 35 U.S.C. § 101. Applicants herein amend claims 49-56 and respectfully request that the Examiner reconsider and withdraw this rejection.

The Examiner rejects claims 1-29 and 36-56 under 35 U.S.C. § 112, second paragraph, asserting that the claims are indefinite. Applicants respectfully disagree. With respect to claims 1, 36, and 49, the Examiner is unclear about the meaning of "storing," "enabling forwarding," and "accessed." Applicants respectfully submit that it is clear from the claims that applicants' technology stores pointers to words in the buffer in "forwarding words" located outside of the buffer. It is clear from the specification that "enabling forwarding in the pointers" means setting a "forward enable bit" in the pointer, allowing "a kind of 'invisible indirection' to be enabled." (Specification, 5:11-17, 28:3-5). By "accessed" applicants mean a memory access, such as a read or a write.

With respect to claims 10, 18, 22, 24, and 25, the Examiner is unclear as to the meaning of "sync" mode. Applicants respectfully submit that the meaning of "sync" mode is clear from the specification at page 6, lines 4-8 and Figure 4. In "sync" mode, when a thread attempts to write to a memory location whose full/empty bit is set to full or read from a memory location whose full/empty bit is set to empty, the thread is blocked. A full/empty bit associated with a memory location is set to full when the memory location is successfully written to and is set to empty when the memory location is successfully read. Furthermore, applicants are unable to find any mention of "sync" mode in claim 18. The Examiner also points out that it is uncertain whether "synchronization mode" in claims 10 and 11 refers to "synchronization access mode" in claim 9. Applicants herein amend claims 10 and 11 to address the Examiner's concern.
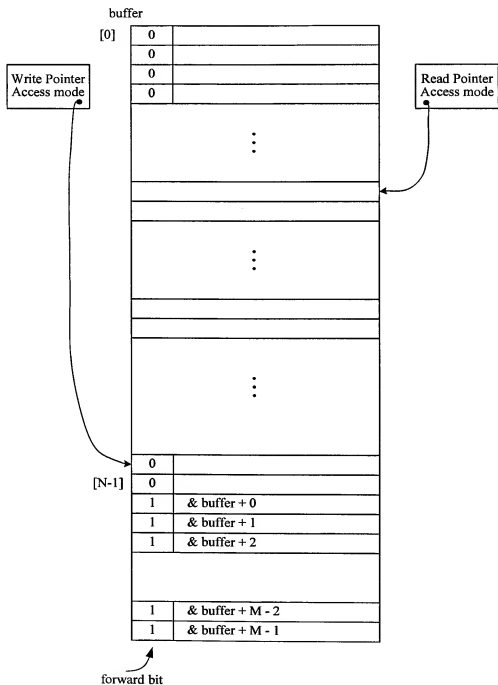
With respect to claims 11 and 46, the Examiner is unclear as to the meaning of "mode is normal." Applicants respectfully submit that the meaning of "normal" mode is clear from the specification in the table on page 6 and Figure 4. In "normal" mode, the full/empty bit is irrelevant to the success of a memory access.

With respect to claims 14 and 18, the Examiner is unclear as to the meaning of "read data is to be stored." Claim 18 clearly indicates that this refers to a location where data is to be stored once the data is read from the buffer. Applicants are unable to find this phrase in claim 14. The Examiner is also unclear as to "why data is being copied on a read operation." (Office Action, Page 5). The data is being copied so that it can be returned to, for example, a thread attempting to read the data. (Specification, page 29, lines 16-17).

The Examiner rejects all of the pending claims over Ray, either alone or in combination with other references. Ray is directed to a technique for providing access to a ring buffer associated with a producer (i.e., a peripheral device) to multiple consumers (i.e., applications) by providing each consumer with a separate read pointer. (Ray, Abstract). In this manner, each consumer can read data from a producer, which writes to the buffer via a write pointer, at its own pace without requiring multiple buffers. (Ray, 2:35-46). As each consumer or the producer accesses the ring buffer, its associated pointer is advanced to the next location or "register." (Ray, 1:49-59). After a pointer reaches the end of the buffer, "the next advance moves or changes the pointer so that it references the address of the start register rather than the next numerical address." (Ray, 1:59-63).

In contrast, applicants' technology redirects accesses to words beyond the end of a buffer to a word within the buffer. The figure on the following page provides an illustration of a sample embodiment of applicants' technology. Initially, pointers to words within the buffer are stored in words past the end of the buffer. These "forwarding words," shown in the lower portion of the illustration, have a "forward enable" bit set so that when they are accessed the access can be re-directed, or forwarded, to the word pointed to by the stored pointer. When a buffer access references fewer than the number of forwarding words, the access can be completed sequentially without checking for the end of the buffer. When the end of the buffer is passed and a

forwarding word is accessed, the access is automatically redirected to a word in the buffer.

buffer

[0]	0	
	0	
	0	
	0	

Write Pointer
Access mode

Read Pointer
Access mode

$\vdots$

$\vdots$

$\vdots$

	0	
[N-1]	0	
	1	& buffer + 0
	1	& buffer + 1
	1	& buffer + 2

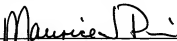| | 1 | & buffer + M - 2 |
| | 1 | & buffer + M - 1 |

forward bit

Claim 1 recites "storing in a number of forwarding words, located past an end of the buffer, pointers to words at the other end of the buffer" and "when a forwarding word is to be accessed, directing the access to the word at the other end of the buffer pointed to by the pointer stored in the accessed forwarding word." Similarly, claim 36 recites "a component that stores in forwarding words located past an end of a buffer pointers to locations at the other end of the buffer" and "a component that, when a forwarding word is accessed, directs the access to the pointed to location at the other end of the buffer." Similarly, claim 49 recites "a forwarding word adjacent to the end of the buffer; and a pointer in the forwarding word pointing to the beginning of the buffer." The Examiner relies on Ray at 1:40-48 and 59-63 as disclosing these features. Applicants respectfully disagree that Ray discloses these features. The relied-upon portions of Ray describe advancing a read or write pointer around a ring buffer after each access, "so that it always references the next location." (Ray, 1:49-63). Because Ray advances a pointer with each access and automatically advances the pointer to the beginning of the buffer when the end is reached, locations beyond the end of the buffer are never reached and, therefore, are never accessed. Ray does not store pointers to buffer locations adjacent to the end of the buffer, as recited. Accordingly, claims 1, 36, and 49 are patentable over Ray, as are their dependent claims 2-29, 37-48, and 50-55.

In view of the above amendments and remarks, applicants believe the pending application is in condition for allowance and respectfully request reconsideration.

Please charge any deficiency in fees or credit any overpayment to our Deposit Account No. 50-0665, under Order No. 324758003US7 from which the undersigned is authorized to draw.

Dated: April __9__, 2008   Respectfully submitted,

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